

FIRST PUBLIC MEETING

FOR THE

**Powell River, North Fk Powell River,
South Fk Powell River, Butcher Fk,
Wallen Creek, Bailey's Trace, Ely
Creek, Gin Creek, Lick Branch,
Puckett Creek and Stone Creek
TMDL Development**

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DEQ- Southwest Regional Office



Overview

- Department of Environmental Quality
 1. Conducts Water Sampling
 2. Assess the data by comparing it to standards
 3. Problem (**Impaired**) waters are listed
In an EPA report called the 303(d)
Total Maximum Daily Load (TMDL) List

TMDL required by State and Federal Law

Total Maximum Daily Loads are Mandated by Law

- Federal 1972 Clean Water Act requires
 - **Water Quality Monitoring**
 - **Periodic Assessment and Impaired Waters Listing**
 - **Develop TMDLs for Impaired Waters**
- Virginia's 1997 Water Quality Monitoring Information and Restoration Act (WQMIRA) requires
 - **TMDLs for Impaired Waters**
 - **An Implementation Plan**
- 1999 Consent Decree with EPA to develop TMDL Reports for all 1998 listed streams by 2010

Designated Uses

Recreation (swimming and boating)

Aquatic Life

balanced, indigenous including game fish

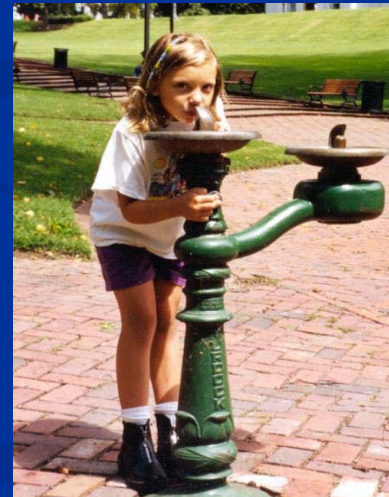
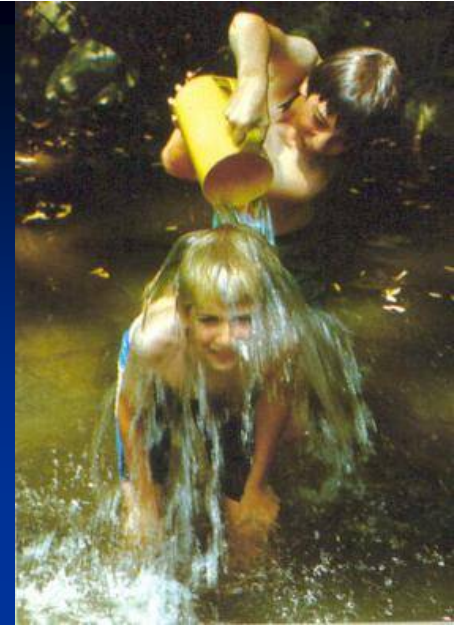


Wildlife

Edible natural resources

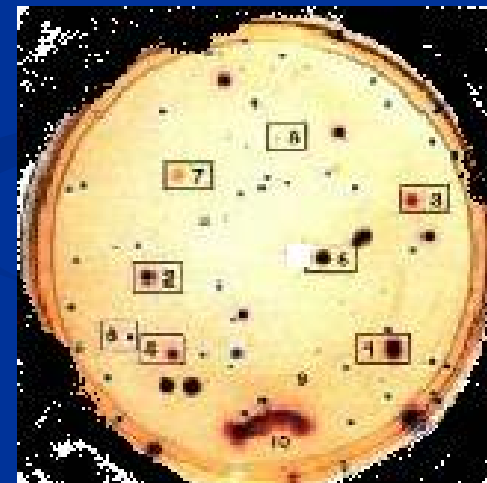
Fish

Shellfish (on the coast)



What are Water Quality Standards?

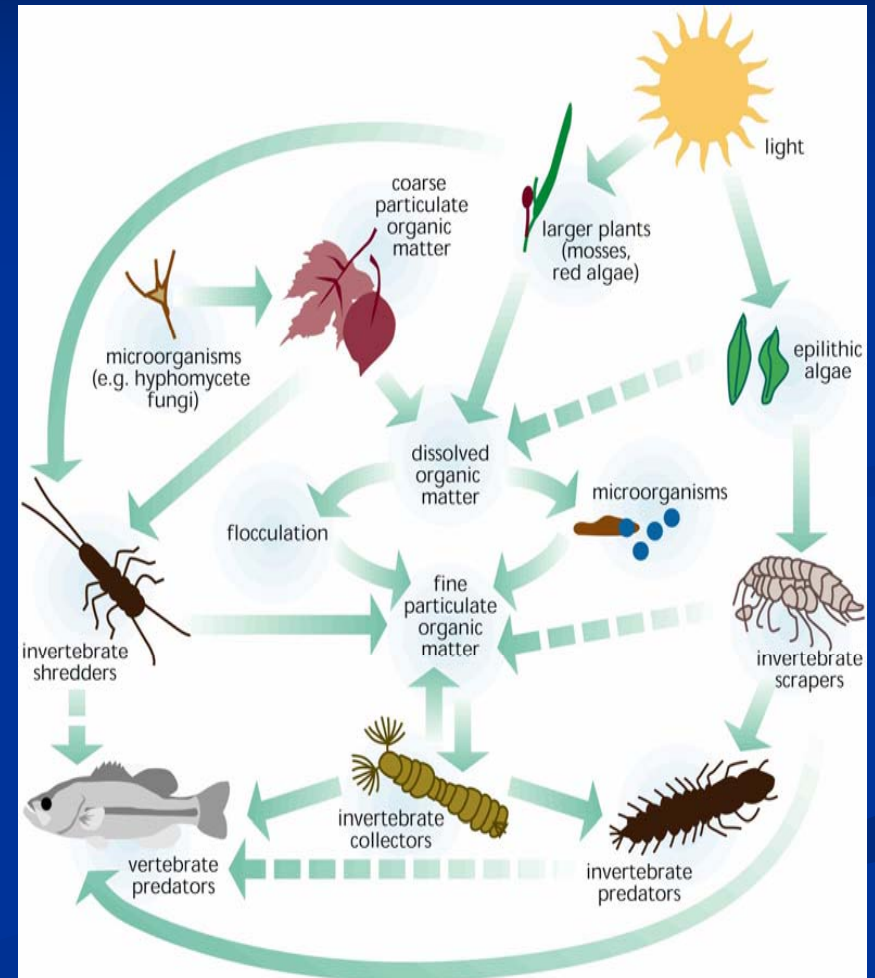
- **Numeric or Narrative Limits** designed to protect designated uses
 - Recreational use: measured by the number of colony forming units of bacteria in the water
 - Aquatic life use: measured by the numbers and varieties of aquatic organisms that live in our streams



Aquatic Life Use: How do we determine aquatic health?

Benthic Macro Invertebrates are Good indicators of Water Quality

- High diversity
- Respond to environmental conditions predictably and quickly
- Wide spread distributions and relatively easy to identify



Pollution Intolerant Invertebrates



Mayfly



Stonefly



Caddisfly



Water Penny

Moderately Pollution Tolerant Invertebrates



Crayfish



Net spinning
Caddisfly



Dragonfly



Aquatic Sowbug

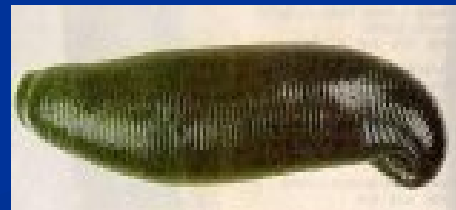
Highly Pollution Tolerant Invertebrates



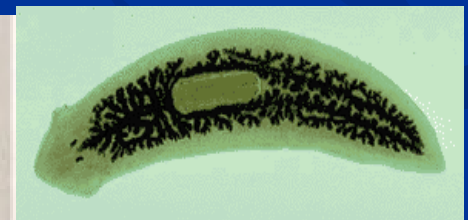
Midge Larvae



Segmented Worm



Leach



Flatworm

Powell River

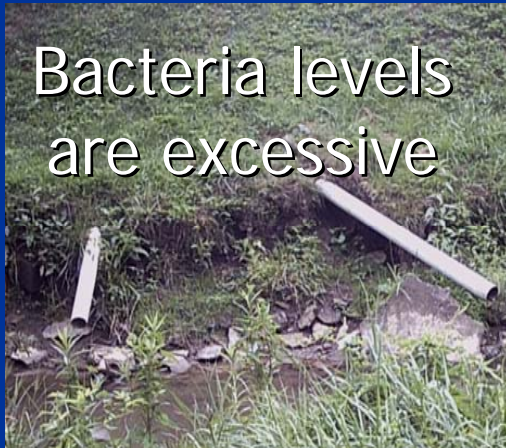
Why Are We Here?

Two Separate Problems!

#1 Bacteria



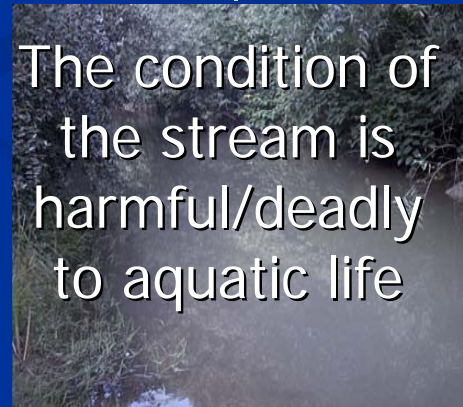
Bacteria levels
are excessive



#2 Aquatic Life



The condition of
the stream is
harmful/deadly
to aquatic life



Approximately 82 impaired stream miles.

Why are We Here?

Not Supporting Recreational Use or Aquatic Life Use

- **Bacteria Standard** (9 VAC 25-260-170) “ E. Coli no more than 235 bacteria per 100 ml
- **General Standard (Benthic)** (1998)
- (9 VAC 25-260-20): “All state waters shall be free from substances...which are harmful to human, animal, plant, or aquatic life.”

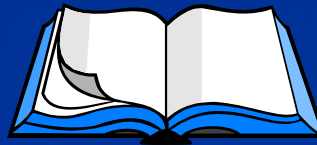
What is a TMDL or Total Maximum Daily Load?

- Amount of a pollutant that a waterbody can receive and still meet water quality standards
- It is pollutant specific
 - Aquatic Life Stressors
 - Bacteria
- It is a process to restore impaired waters
- A special study that:
 - Identifies all significant pollution sources,
 - Calculates amount of pollution from each source, and
 - Calculates pollution reductions, by source, needed to attain water quality standards.

What Next?

We Are Here

Implementation Plan



**Total
Maximum
Daily
Load**

**TMDI
Study**



- Identifies permit controls, best management practices, or remediation options needed to make necessary pollutant reductions

Implementation



Clean

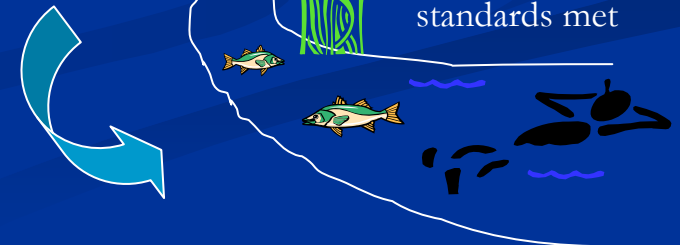
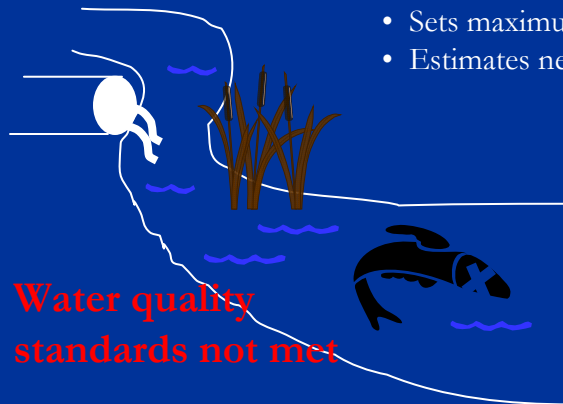
Water quality
standards met

Polluted

- Calculates amounts from each source
- Tracks pollutants in the system
- Sets maximum pollutant load
- Estimates necessary pollutant reductions

The Process

Water quality
standards not met



What are the Steps in the TMDL Process?

1. Public notice for TMDL development
2. TMDL Study with Public Meeting - Monitoring and Modeling the Watershed
3. Public notice for Draft TMDL
 - Public Meeting with 30-day comment period
4. Submit to EPA for approval
5. State Water Control Board adoption of TMDL
6. TMDL Implementation Plan
7. Implementation of Corrective Actions Prescribed by Implementation Plan
8. Further Monitoring to Measure Success

Information

- TMDL

- Virginia

- DEQ homepage - <http://www.deq.virginia.gov/tmdl>

- Federal

- EPA homepage - <http://www.epa.gov/owow/tmdl/>



Thank You !



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